



# **ata**

## **MANUAL**

**OVERHAUL**

**DILUTER DEMAND OXYGEN REGULATOR ASSEMBLY**

**28000 SERIES**

**35-11-24**

Feb. 27/76

H-124

**SCOTT<sup>®</sup>**  
**ATO**

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SERVICE BULLETIN LIST

NUMBER	REV	DATE INCORP	BY	NUMBER	REV	DATE INCORP	BY

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Service Bulletin List

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RECORD OF TEMPORARY REVISIONS

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Record of Temporary Revisions

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DILUTER DEMAND OXYGEN REGULATOR  
ASSEMBLIES

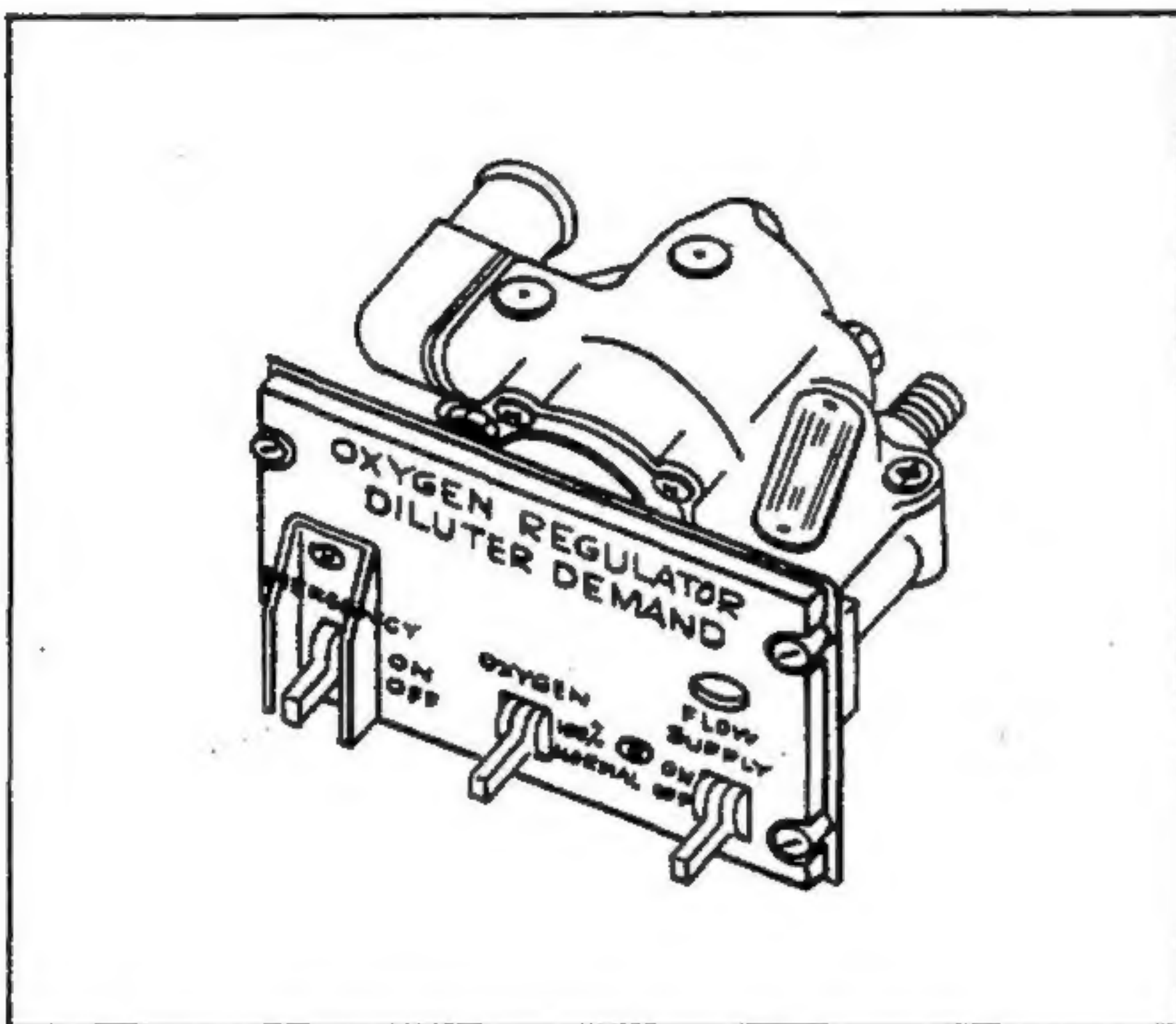
1. Description and Operation

A. General

- (1) This manual provides overhaul instructions with illustrated parts list for the 28000-01, 28000-03, 28000-05, 28000-07, 28000-09, 28000-15 and 28000-17, Diluter Demand Oxygen Regulator Assemblies (see figure 1).
- (2) All 28000 regulators are similar in design and construction. The specific regulators differ from each other only in external parts such as mounting plate assemblies, and control panel lighting and wiring. The specific differences may be noted by reviewing the "Illustrated Parts List".

B. Purpose of Equipment

- (1) The diluter demand oxygen regulator is utilized in aircraft control cabins to fulfill the supplemental and protective breathing requirements of aircraft crew members at cabin altitudes of 5,000 to 40,000 feet. The regulator forms part of the crew oxygen system and is designed for operation with oxygen at inlet pressures of 50 to 75 psi.



Diluter Demand Oxygen  
Regulator Assembly  
Figure 1

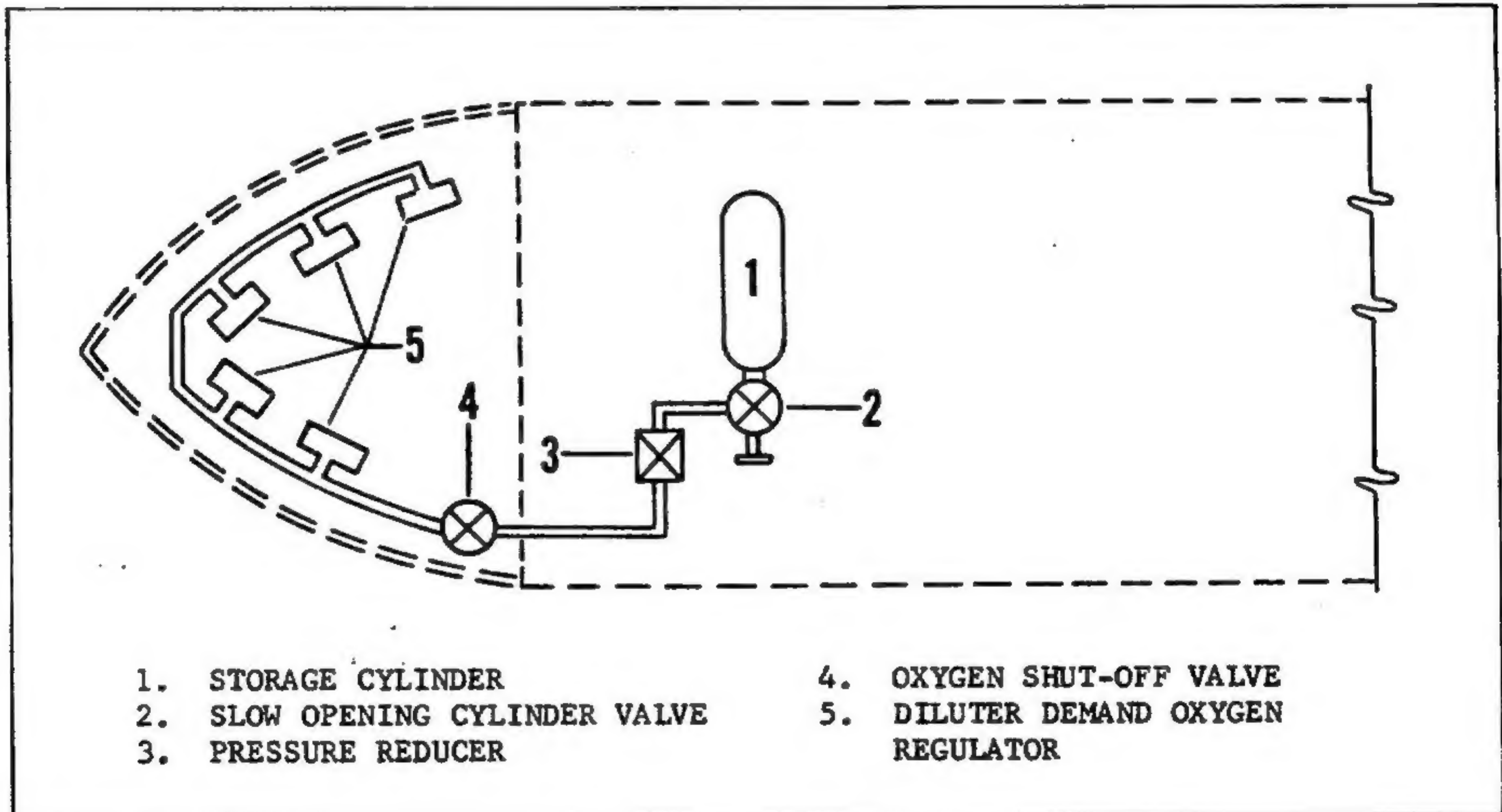


### C. Typical Installation

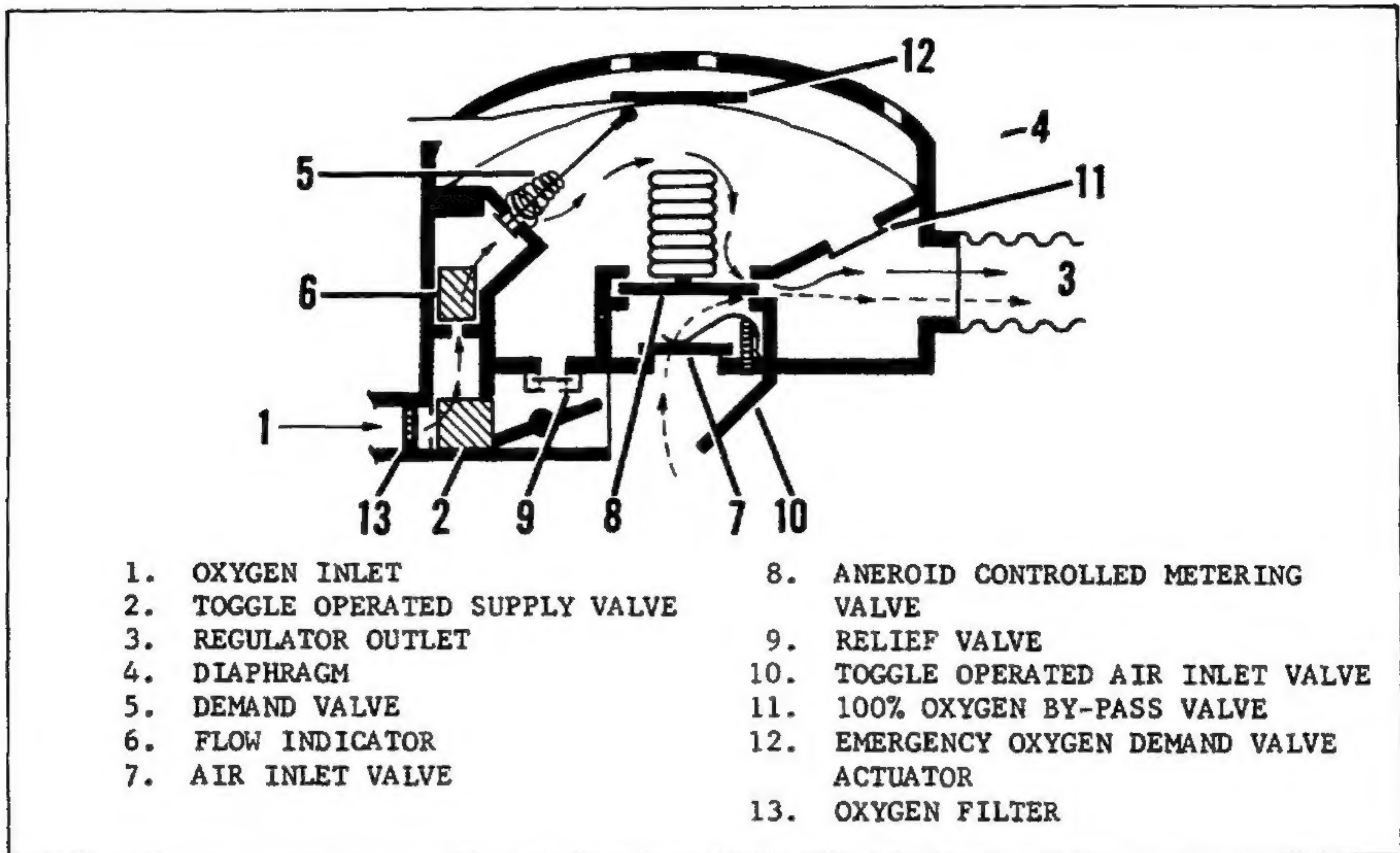
- (1) A typical installation of the 28000 series regulators in a pressurized control cabin is shown in figure 2. Oxygen, which is stored at a high pressure in cylinder (1), flows through slow opening cylinder valve (2) to pressure reducer (3) which reduces the high storage pressure to a pressure of 50 to 75 psi. This low pressure oxygen then flows via control cabin shut-off valve (4) to diluter demand regulators (5). Oxygen masks then convey the air-oxygen mixture from regulators (5) to the crew.

### D. Operation

- (1) The 28000 series diluter demand oxygen regulators mix breathing oxygen with ambient cabin air to provide the proper oxygen-air ratio for breathing at altitudes to 40,000 feet. Normal regulator operation is described below (see figure 3).



Typical Installation  
Figure 2



Schematic Flow Diagram  
Figure 3

- (a) Oxygen, at the required inlet pressure of 50 to 75 psi, enters the regulator at inlet (1) and passes through filter (13) to "SUPPLY" valve (2). Supply valve (2) is toggle operated from the control panel and must be in the "ON" position for regulator operation.
- (b) When the user inhales through the mask hose connected to outlet (3), a pressure drop occurs within the regulator. This pressure drop causes diaphragm (4) to move downward due to the action of the higher ambient cabin pressure on top of diaphragm (4).
- (c) The resulting movement of diaphragm (4) tilts demand valve (5), causing oxygen to flow through flow indicator (6) into the regulator. Flow indicator (6) provides a visual indication of oxygen flow at the control panel.





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(d) At the same time, ambient cabin pressure acts against the disc of air inlet valve (7), and due to the negative pressure within the regulator, causes valve (7) to open resulting in entry of ambient cabin air. The spring acting against the valve disc is adjusted to permit opening of valve (7) at the same differential pressure required to operate demand valve (5). This "balance" of demand valve (5) and air inlet valve (7) permits the flow of gas through each valve.

(e) The gas from each valve must pass through aneroid controlled metering valve (8) which meters the flow of each gas to obtain the proper oxygen-air ratio for breathing at the various altitudes.

An aneroid to which a valve disc is connected, expands with decreasing ambient cabin pressure and compresses with increasing cabin pressure.

The valve modulator which is located between two valve seats, aligns itself nearer the upper (oxygen) valve seat at low cabin altitudes (high cabin pressure) and nearer the lower (air) valve seat at high cabin altitudes (low cabin pressure). This action of the metering valve permits unrestricted air flow past the valve with the valve disc in the up (low altitude) position and unrestricted oxygen flow past the valve with the valve disc in the down (high altitude) position. This action results in a high oxygen ratio at high altitudes and a high air ratio at low altitudes. From metering valve (8), the oxygen-air mixture passes to regulator outlet (3) for usage.

(f) The action of demand valve (5) and air inlet valve (7) results in increased regulator pressure. This pressure increase causes diaphragm (4) to raise and close demand valve (5). The pressure increase also causes inlet valve (7) to close.

(g) The cycle of operation described above repeats at each inhalation.

(2) The regulator contains three manually operated toggles and a flow indicator. These controls are located on the regulator control panel and are described below.

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- (a) "FLOW" Indicator. The small window marked "FLOW" contains a flow indicator of the float type. This indicator provides a visual indication of oxygen flow during each inhalation.
- (b) "SUPPLY" Toggle. The toggle marked "SUPPLY" has an "ON" and an "OFF" position. In the "OFF" position oxygen is shut off near the regulator inlet. In the "ON" position oxygen is permitted to flow to demand valve (5).
- (c) "OXYGEN" Toggle. The toggle marked "OXYGEN" has a "100%" and a "NORMAL" position. In the "NORMAL" position the regulator functions as described in paragraph 1.D.(1). In the "100%" position air inlet valve (10) is closed and by-pass valve (11) is opened permitting undiluted oxygen to flow directly to outlet (3).
- (d) "EMERGENCY" Toggle. The toggle marked "EMERGENCY" has an "ON" and an "OFF" position. During normal regulator operation per paragraph 1.D.(1) this toggle is in the "OFF" position. When placed in "ON" position actuator (12) depresses diaphragm (4) thus opening demand valve (5). This action permits oxygen to enter the regulator and create a positive safety pressure of 1.5 inches of water minimum. This safety pressure prevents inward mask leakage thus assuring the user of 100% oxygen at a positive pressure. Relief valve (9) prevents excessive pressure buildup within the regulator when the toggle is in the "ON" position.

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2. Disassembly (See IPL figure 1)

NOTE: Prior to disassembling a 28000 series regulator, note the part number and determine which parts apply to that specific regulator by reviewing the "Illustrated Parts List". Disregard any instructions that do not apply to the particular part number regulator being overhauled.

- A. Unscrew the caps of light assemblies (8) and carefully remove the bulbs and rubber bushings of the light assemblies.
- B. Remove plate (12) by removing screws (17), washer (18) and bushings (19). This will also permit removal of guard (20).
- C. Remove the bodies of light assemblies (8) by unsoldering or unscrewing the electrical cables and removing the retaining nuts and washers. This will permit removal of the bodies through the front of the mounting plate.
- D. Remove screws (23, 24 and 25) and separate mounting plate assembly (26 through 62) from the remainder of the unit.
- E. Before disassembling mounting plate assembly (26 through 62), remove the components loosened by removal of the mounting plate assembly. These components include clip (64), spacer (65), washers (67), lens (68), packing (69), body assembly (70) and gasket (71).

NOTE: To aid reassembly, note the number of washers (67) removed at this time.

- F. Disassemble mounting plate assembly (26 through 62) as follows:
  - (1) Fasteners (26) are pressed into plate (62) and should be removed only if necessary.
  - (2) Nuts (27) are secured by rivets and should be removed only if necessary.
  - (3) Remove screws (30) and disassemble cover assembly (31 through 45) as follows:
    - (a) Release pin (32) by removing pin (31).
    - (b) Remove setscrew (33) to release pin (35) which retains arm (34) to cover (45).



## TEMPORARY REVISION 35-14

To Holders of:

28000 Series Diluter Demand Oxygen Regulator Assembly  
Overhaul Manual 35-11-24, Revision 3  
Dated Feb 27/76.

### SUBJECT:

Inclusion of text for "Equivalent substitutes may be used for listed items" and specified voltage for insulation testing.

### REASON FOR ISSUANCE:

Customer request for inclusion of text.

### EFFECTIVITY:

All 28000 Series Diluter Demand Oxygen Regulator Assemblies.

### INSTRUCTIONS:

1. Insert each of the following pages adjacent to the page that is revised, as indicated on each subsequent page of this Temporary Revision.
2. After the pages of this Temporary Revision are inserted into the appropriate place in the above referenced Overhaul Manual, record the Temporary Revision Number, Page Number, Issuance Date and your initials into the appropriate columns on the RECORD OF TEMPORARY REVISIONS page in the front of the Overhaul Manual.
3. Place this page (1 of 5) in the above referenced Overhaul Manual, opposite page 1/2 of RECORD OF TEMPORARY REVISIONS.

### ADDITIONAL INFORMATION:

For additional information contact:

Scott Aviation, 225 Erie Street, Lancaster, New York, USA  
Tel: (716) 683-5100, Fax: (716) 681-1089

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TEMPORARY REVISION 35-13

TITLE: ADDITION OF PREFORMED PACKING (170)

To: HOLDERS OF DILUTER DEMAND OXYGEN REGULATOR ASSEMBLY -  
28000 SERIES - OVERHAUL MANUAL 35-11-24, REVISION 3,  
DATED FEB 27/76.

REASON FOR ISSUE:

An o-ring groove was added to regulator body, part number 24897 (135, IPL Figure 1). The preformed packing (170) that is installed in that groove, seals the area between the body (135) and the aneroid housing (112), thereby facilitating the functional oxygen dilution set-up of the regulator.

EFFECTIVITY:

Regulator bodies, part number 24897, that were manufactured during, and subsequent to, the fourth quarter of 1979 (4Q79).

FILING INSTRUCTIONS:

- A. Insert pages of this document, into OHM 35-11-24, in accordance with "FILING INSTRUCTIONS" provided on each page.
- B. Record incorporation of the contents of this document into the "RECORD OF TEMPORARY REVISIONS" page included in the front matter of OHM 35-11-24.

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**TEMPORARY REVISION 35-13**

**FILING INSTRUCTION: Insert facing page 103/104, 35-11-24.**

**K. ....**

**(10) ....**

**(11) Remove preformed packing (170) from body (135).**

**NOTE: Preformed packing (170) is only present in bodies  
(135) that were manufactured during, and subsequent  
to, 4Q79.**





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- (c) Remove spring (36) from pin (37), then remove pin (37) by unthreading screw (38). Washer (39) and bushing (40) will also be released.
- (d) Housing assembly (41) may then be removed from cover (45) by backing out screws (42 and 44) and removing washer (43).
- (4) Remove screws (47 and 48) and nut (49), then disassemble toggle assembly (50 through 53) by removing setscrew (50) to release pin (52). This will permit separation of arm (51) from cover (53).
- (5) Remove link (54), then remove lever (55) by withdrawing pin (56).
- (6) Bracket (57) is riveted to plate (62) and should be removed only if necessary.
- (7) Unsolder cable assemblies (59 and 60) from connector (61) if necessary and remove connector (61) from plate (62) by unthreading the retaining nut.
- G. Remove screw (73) and washer (74) which retain clamp (72), then remove cable assemblies (75) and (77). Remove screw (81) and nut (82) to separate cable assembly (79) from terminal lug (83).
- H. Removal of plate (85) or plate (87) may be accomplished by removing screws (86 or 88) as necessary.
- I. Remove adapter (89) by loosening nuts (91) and unthreading setscrews (90). Packing (92) may then be removed. Peel off label (93) only if necessary.
- J. Separate body assembly (97 through 135) from remainder of unit by removing screws (95).
- K. Disassemble body assembly (97 through 135) as follows.
  - (1) Remove cover assembly (97) by removing screws (98) and washers (99 and 100).
  - (2) Remove screws (102) and washers (103) to release valve assembly (101) and gasket (104).
  - (3) Remove ring (105) to release seat (106) and gasket (107).



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- (4) Release clamp (108), observing caution not to damage stem of aneroid (114). Spring (109), modulator (110) and washer (111) may then be removed from the stem.
- (5) Remove screws (113), then remove housing (112) and aneroid (114) by unthreading the aneroid from body (135).
- (6) Remove bracket (115) and washer (116) from setscrew (117), then remove setscrew (117).
- (7) Remove screws (119) and washers (120) to release deflector (118), valve assembly (121) and gasket (122).
- (8) Unscrew bushing (123), then remove screw (124). This will permit removal of spring (125), pin (126), link assembly (127), valve (128), pin (129), spring (130), washer (131) and packing (132).
- (9) Remove valve assembly (133); do not disassemble.
- (10) Remove gasket (134) from body (135).
- L. Separate diaphragm assembly (136) and packing (137) from cover assembly (142 through 160).
- M. Unthread union (138) and remove packing (140) from cover assembly (142 through 160).
- N. Disassemble cover assembly (142 through 160) as follows.
  - (1) Remove setscrew (142) to release pin (144) which holds arm (143) in place.
  - (2) Remove cover (145) by unthreading screws (146). This will release ball (147).
  - (3) Remove setscrew (148) from piston (149). Spring (150), retainer (151), gasket (152), packing (153) and valve (154) may then be removed from cover (160).
  - (4) Release spring (156) by removing setscrew (155). This will permit separation of plate (158) and lever (157).
  - (5) Complete the disassembly by removing screen (159) from cover (160).

## TEMPORARY REVISION 35-14

### INSTRUCTIONS:

Insert this page facing page # 201/202.

### REVISIONS:

The revisions on this page are the following:

1. Original Text:
  - A. Using the materials listed in Table I, perform the cleaning procedures outlined in the following paragraphs:
2. Revised Text:
  - A. Using the materials listed in Table I, perform the cleaning procedures outlined in the following paragraphs. Equivalent materials may be substituted for the listed items.





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3. Cleaning

**WARNING:** DO NOT ALLOW OIL, GREASE, FLAMMABLE SOLVENTS OR OTHER COMBUSTIBLE MATERIALS TO COME IN CONTACT WITH PARTS THAT WILL BE EXPOSED TO PRESSURIZED OXYGEN. SUCH MATERIALS, AS WELL AS DUST, LINT, AND FINE METAL FILINGS ARE ALL POTENTIAL COMBUSTIBLES WHICH WHEN EXPOSED TO OXYGEN UNDER PRESSURE, MAY IGNITE AND RESULT IN AN EXPLOSION.

A. Using the materials listed in Table I, perform the cleaning procedures outlined in the following paragraphs:

MATERIAL	DESCRIPTION	USE	REFER TO PARAGRAPH
1,1,1, Trichloroethane (Stabilized)	MIL-T-81533 Fed Spec O-T-620	Method A Cleaning	3.B.(1)
Isopropyl Alcohol	TT-I-735	Cleaning body assembly (70, IPL figure 1)	3.C.

List of Cleaning Materials  
Table I

B. Metal parts which have been contaminated can be cleaned by the following method using the materials listed in Table I.

(1) Method A. Use a vapor degreasing method with stabilized 1,1,1 Trichloroethane. Blow clean and dry with a stream of clean, dry, oil-free air.

C. Clean body assembly (70, IPL figure 1) using isopropyl alcohol. Blow clean and completely dry with a stream of clean, dry, oil-free air.

D. All other non-metallic parts such as silicone and rubber components may be cleaned by using an ultrasonic detergent and water cleaning system. Rinse parts in clean water and dry thoroughly before re-assembly.

E. Remove dirt and foreign particles from equipment by wiping with a clean lint-free cloth, or by blowing clean, dry, oil-free air.

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4. Inspection/Check

- A. Visually inspect all parts for cracks, nicks, or burrs which might cause malfunction of the regulator.
- B. Make a particularly careful inspection of diluter valve assembly (101, IPL figure 1) and (106). The seating surfaces must be free of scratches.
- C. Visually inspect oxygen modulator (110) and diluter valve assembly (101). The valves must be smooth, polished and flat, free from splits, scratches or imperfections.

CAUTION: ANEROID ASSEMBLY (114) IS A PREADJUSTED UNIT AND SHOULD NOT BE TAMPERED WITH. IF THE UNIT IS INOPERATIVE, REPLACE WITH A FACTORY-ADJUSTED REPLACEMENT PART.

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5. Repair (See IPL figure 1)

- A. Repair of parts other than removing burrs or polishing valve seats is not recommended.
- B. Small scratches may be removed from valve seat surfaces by lapping flat.
- C. Replace demand valve assembly (121), diaphragm (136), packings (69, 92, 132, 137, 140 and 153), gaskets (71, 104, 107, 122, 134 and 152) and screen (159).
- D. On regulators bearing serial numbers 1106, 1140, 1142, 1144, 1145, 1146, 1148 through 1152, 1165, 1167, 1168, 1170 through 1176, 1179 through 1183, and 1191, it is recommended that disc, part number 10000984, and modulator, part number 10000983, be replaced by modulator (110).
- E. If replacement of any component of 22162-1, Body Assembly is required, replace the entire assembly with body assembly (70) in all configurations.



## TEMPORARY REVISION 35-14

### INSTRUCTIONS:

Insert this page facing page # 501.

### REVISIONS:

The revisions on this page are the following:

1. Original Text:

NOTE: Table II lists the consumable material necessary for assembly.

2. Revised Text:

The following table (List of Consumable Materials for Assembly and Testing, Table II) lists the materials necessary for assembly. Equivalent materials may be substituted for the listed items, except for Lubricant (Krytox 240AC).

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6. Assembly (See IPL figure 1)

NOTE: Table II lists the consumable material necessary for assembly.

MATERIAL	DESCRIPTION	MANUFACTURER*	REFER TO PARAGRAPH
Sealing Compound	Glyptal No. 1201	V01139	6.A.(4)
Lubricant	Krytox 240AC	V18873	6.A.(5) 6.A.(6) 6.D.(3)
Adhesive	Eastman No. 910	V74364	6.D.(8)
Bonding Agent	Loctite, Grade C	V05972	6.D.(9)
Adhesive	DC No. A-4000	V71984	6.D.(10)
Oxygen	MIL-O-27210, Type I	V07098	8.
<p><u>WARNING:</u> NO SUBSTITUTIONS SHALL BE USED FOR OXYGEN LUBRICANTS. *Refer to paragraph 12.A.(5) for Vendor's Code</p>			

List of Consumable Materials for Assembly and Testing  
Table II

NOTE: Prior to assembling a 28000 series regulator, note the part number and determine which parts apply to that specific regulator by reviewing the "Illustrated Parts List". Disregard any instructions that do not apply to the particular part number regulator being overhauled.

A. Reassemble cover assembly (142 through 160) in the following manner.

- (1) Insert screen (159) in cover (160) with fine filter side toward inside of cover (160).
- (2) Assemble lever (157) to plate (158), bending tabs of plate (158) to retain lever (157).
- (3) Insert lever (157) through slot in cover (160). Slide spring (156) into hole in lever (157) and place other end of spring (156) into hole of cover (160). Install setscrew (155) and tighten to apply tension to spring (156).

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TEMPORARY REVISION 35-13

FILING INSTRUCTION: Insert facing page 502, 35-11-24.

D. Reassemble regulator body ...

NOTE: Bodies (135) manufactured during, and subsequent to 4Q79, have an o-ring groove within the body bore that accommodates aneroid housing (112).

Apply a thin film of Krytox 240AC lubricant to preformed packing (170) and install packing into o-ring groove of body (135).

(1) Test valve assembly ...

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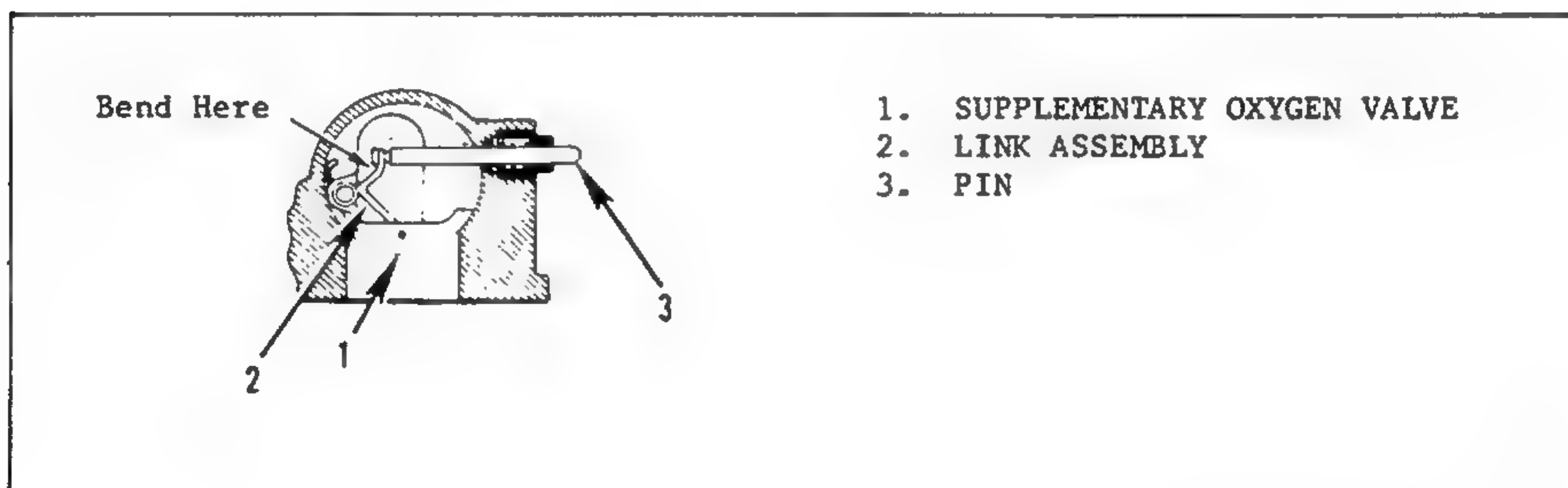




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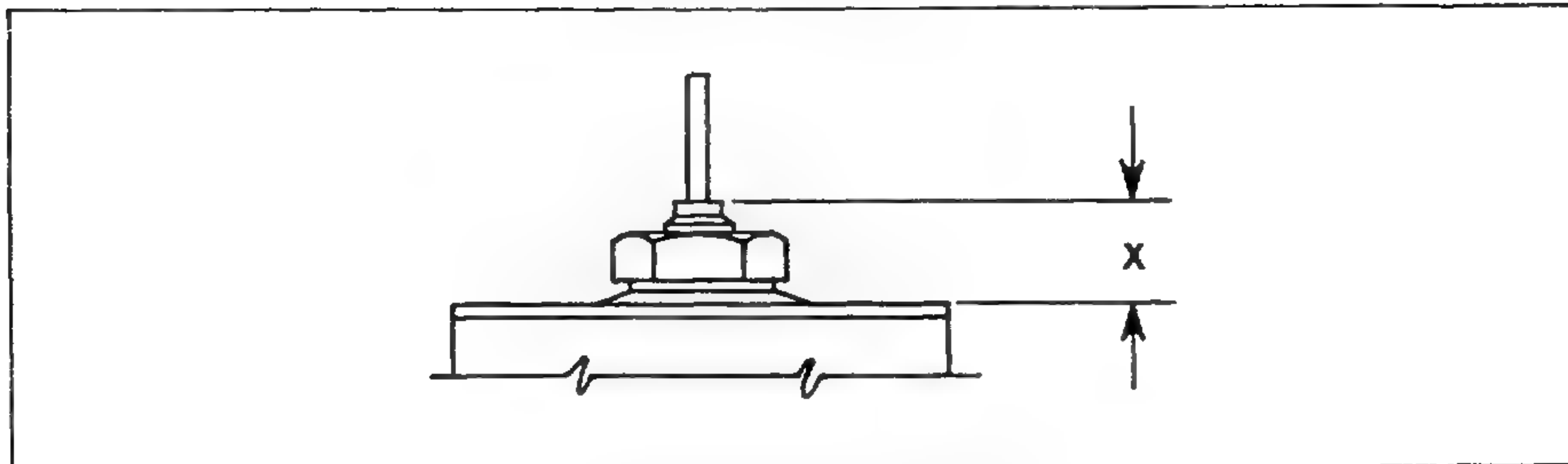
- (4) Assemble arm (143) to cover (145) and secure by installing pin (144) and setscrew (142). Seal setscrew (142) with a small amount of Glyptal.
  - (5) Install setscrew (148) in piston (149). Apply a wipe coat of Krytox to packing (153), then position and install valve (154), packing (153), gasket (152), and retainer (151) in cover (160). Apply a wipe coat of Krytox lubricant on piston (149), then place spring (150), piston (149) and setscrew (148) in retainer (151).
  - (6) Apply a wipe coat of Krytox lubricant to ball (147), then hold ball (147) in position and secure cover (145) by installing screws (146). Apply a wipe coat of Krytox to valve (154) at small diameter end. Check action by operating arm (143). No binding or sticking should occur.
- B. Position packing (140) on cover (160) and secure union (138).
- C. Place packing (137) and diaphragm assembly (136) on cover (160) and temporarily set cover aside.
- D. Reassemble regulator body assembly (97 through 135) in the following manner.
- (1) Test valve assembly (133) in accordance with the following procedure.
    - (a) Connect valve assembly (133) to a regulated pressure source and apply a pressure of 17 inches of water.
    - (b) Leakage, as indicated on a flowmeter, must not exceed 10 cc per minute at 17 inches of water.
    - (c) Increase pressure to 3 inches of Hg (40.8 inches of water). Relief valve must vent a minimum of 45 liters per minute.
  - (2) Place gasket (134) on valve assembly (133) body and assemble valve assembly (133) to body (135).
  - (3) Apply a wipe coat of Krytox on stem and groove of pin (129), then place packing (132), washer (131), spring (130) and pin (129) in body (135) and secure with bushing (123).

- (4) Preassemble valve (128), link assembly (127), pin, (126), spring (125) and screw (124). Make sure looped tang of spring (125) is hooked over link assembly (127).
- (5) Slide preassembled parts of step (4) in position in body (135). Depress pin (129) to permit forked end of link assembly (127) to engage with pin. Make sure spring tension forces valve (128) down over port in body (135) and thread screw (124) into body (135). Actuate pin (129) several times and adjust link assembly (127) on screw (124) as necessary to provide operation without binding or sticking. Adjust valve to cover port as shown in figure 601.
- (6) Position gasket (122, IPL figure 1), valve assembly (121) and deflector (118) on body (135) and secure by installing screws (119) and washers (120).
- (7) Prior to installing a new aneroid (114), check dimension X per figure 602.
  - (a) If dimension X is .160 to .170, add two washers (111, IPL figure 1).
  - (b) If dimension X is .175 to .185, add one washer (111).
  - (c) If dimension X is .200 or greater, do not add washers.



Adjustment of Supplementary Oxygen Valve  
Figure 601

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Aneroid Installation Setup  
Figure 602

- (8) Place aneroid (114) inside housing (112) and place modulator (110) on stem of aneroid. With the aneroid resting in the housing place spring (109) in position and slide clamp (108) about 1/16 inch down stem. Seal clamp (108) by adding a drop of Eastman No. 910 adhesive.
  - (9) Thread setscrew (117) into body (135) and place washer (116) against shoulder of setscrew. Thread aneroid (114) with housing (112) onto body (135). Slide bracket (115) into position on setscrew (117) and align screw holes of housing (112) and bracket (115), then secure by installing screws (113), after applying a small amount of Loctite to threads of screws (113).
  - (10) Affix gasket (107) to seat (106) with adhesive No. A-4000 then install seat (106) and gasket (107) in body (135) and secure in place with ring (105).
  - (11) Position gasket (104) in body (135) and install valve assembly (101) with screws (102) and washers (103).
  - (12) Secure cover assembly (97) to body (135) with screws (98) and washers (99 and 100).
- E. Assemble body assembly (97 through 135) to cover assembly (142 through 160) with screws (95). Make sure diaphragm assembly (136) and packing (137) are in position and that diaphragm assembly is straight without puckers or folds.
- F. Install new label (93) on body (135) if it was removed during assembly.

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- G. Place packing (92) on adapter (89) and push adapter in place inside body (135). Install and tighten setscrews (90), then add nuts (91) to setscrews and tighten.
- H. Install plates (85 and 87) and secure with screws (86 and 88).
- I. Place gasket (71) in body (135), aligning hole in gasket with passage in body (135).
- J. Place body assembly (70) up into body (135). Place packing (69) into position.
- K. Assemble mounting plate assembly (26 through 62) in the following manner.
  - (1) Rivet bracket (57) to plate (62), if necessary.
  - (2) Rivet nut (27) to plate (62), if necessary.
  - (3) Attach fasteners (26) to plate (62), if necessary.
  - (4) Mount connector (61) or light assemblies (8) to plate (62). When mounting light assemblies (8), place terminal lug (83) in position on light assembly near flow indicator.
  - (5) Place lever (55) in bracket (57) and secure with pin (56). Make sure that long unbroken surface at end of lever (55) is down.
  - (6) Assemble toggle assembly (50 through 53) by securing arm (51) to cover (53) with pin (52) and by installing setscrew (50).
  - (7) Position toggle assembly (50 through 53) on plate (62) and thread screw (42) into place. Place ends of link (54) in lever (55) and arm (51), then install screw (48) and nut (49) which will secure toggle assembly and also prevent link (54) from falling out. Install screw (47).
  - (8) Assemble cover assembly (31 through 45) in the following manner.
    - (a) Secure arm (34) to cover (45) with pin (35), then install setscrew (33).
    - (b) Assemble pin (37) to arm (34) with screw (38), washer (39) and bushing (40).



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- (c) Slide spring (36) on pin (37) and place housing assembly (41) on pin (37) and secure it to cover (45) with screws (42 and 44) and washer (43).
- (d) Place pin (32) through housing assembly (41) and secure it with pin (31).
- (9) Attach cover assembly (31 through 45) to plate (62) with screws (30).
- (10) Connect cable assembly (75) from left light assembly to right light assembly, then connect cable assembly (59) to connector (61) or cable assembly (77) to light assembly near flow indicator. Complete wiring of unit by soldering cable assembly (60) to terminal (83) or by connecting cable assembly (79) to terminal lug (83) with screw (81) and nut (82).
- L. Prepare to unite mounting plate assembly (26 through 62) with remainder of unit by aligning lens (68) on unit, placing cable assembly (75) under clip (64), and aligning spacer (65) and washer(s) (67) on unit. Make sure lever (157) aligns properly with cover assembly (31 through 45) and lever (55) aligns properly with cover assembly (97), then thread screws (23, 24 and 25) in place to secure.
- M. Draw cable assemblies (59 and 60) or (77 and 79) through clamp (72) and secure clamp with screw (73) and washer (74).
- N. Remove covers of light assemblies (8) and slide plate (12) in place over mounting plate.
- O. Place bushings (19) in holes of plate (12), position guard (20) and washer (18) on plate (12) and secure with screws (17).
- P. Complete reassembly of unit by reassembling light assembly (8).



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7. Fits and Clearances

None

**35-11-24**

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## TEMPORARY REVISION 35-14

### INSTRUCTIONS:

Insert this page facing page # 701.

### REVISIONS:

The revisions on this page are the following:

1. Original Text:  
8. Testing

2. Revised Text:  
8. Testing

NOTE: For Figures 701, 703 and 704, equivalent test equipment may be substituted for test equipment shown.



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8. Testing

WARNING: IN ALL PROCEDURES LISTED BELOW, OXYGEN IS SPECIFIED AS THE TEST GAS. WATER PUMPED NITROGEN OR OIL-FREE AIR MAY BE SUBSTITUTED, ONLY FOR LEAKAGE TESTS. THE USE OF THE OXYGEN ANALYZER FOR DILUTION CHARACTERISTICS TESTING MANDATES THE USE OF OXYGEN. DO NOT, UNDER ANY CIRCUMSTANCES, USE OIL PUMPED GAS AS THIS WILL CAUSE CONTAMINATION OF THE REGULATOR AND TEST EQUIPMENT. OIL, EVEN IN MINUTE QUANTITY, COMING IN CONTACT WITH OXYGEN MAY CAUSE AN EXPLOSION OR FIRE.

A. Altitude Compensated Air Enrichment (see figure 701).

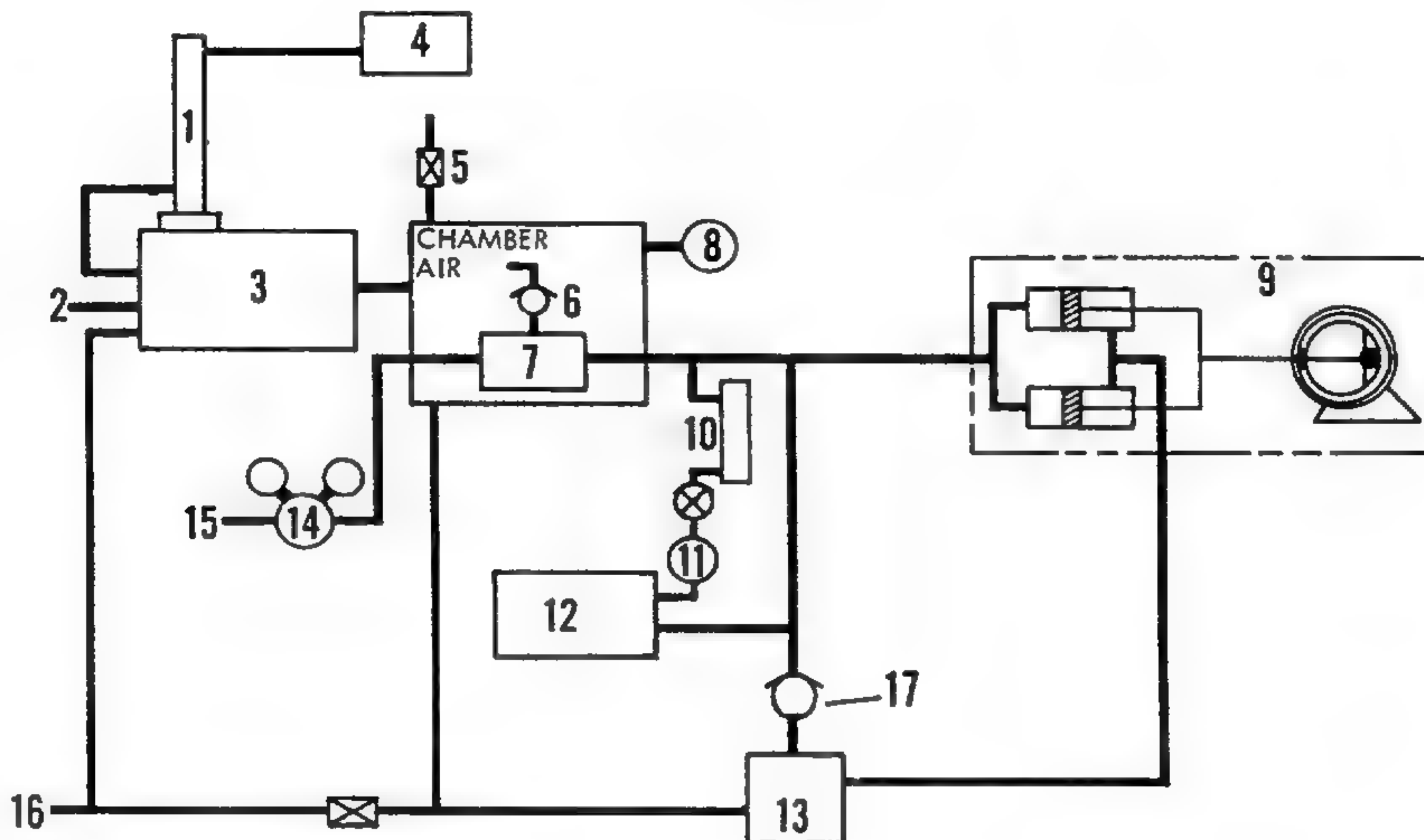
- (1) Place regulator in altitude chamber (6), connect 28000 regulator inlet to pressure regulator (14) and 28000 regulator outlet to breathing machine (9). Make certain breathing machine is adjusted to 20 liters per minute displacement at 22 Hz (0.91 liters per Hz).
- (2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "NORMAL"; and "EMERGENCY" - "OFF".
- (3) Adjust pressure regulator (14) to provide 75 psi to inlet of 28000 regulator.
- (4) Adjust 28000 regulator as follows:
  - (a) Decrease chamber (6) pressure to 226 mm Hg (30,000 feet) as indicated on altimeter (8).
  - (b) With breathing machine (9) operating, adjust aneroid (114, IPL figure 1) until oxygen analyzer (12, figure 701) indicates 215 to 226 mm Hg (95% to 100%) oxygen.




NOTE: Pump (11) must be on to draw an oxygen sample through the analyzer.

- (c) Increase chamber (6) pressure to 632 mm Hg (5,000 feet) and adjust screw (117, IPL figure 1) until oxygen analyzer (12, figure 701) indicates 158 mm Hg (25%) oxygen.

NOTE: Clockwise rotation of screw (117, IPL figure 1) decreases oxygen percentage at low altitudes only.

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- |  |  |
|--|--|
| 1. BAROMETER (TYPE A1  )*                   | 9. BREATHING MACHINE   |
| 2. 50 psi PRESSURE SOURCE  | 10. FLOWMETER (1000 cc)  |
| 3. PRESSURE CONTROLLER<br>(MODEL 2R-408  )* | 11. DIAPHRAGM PUMP   |
| 4. VACUUM PUMP   | 12. OXYGEN ANALYZER<br>(MODEL F3M3-1A3A  )* |
| 5. BLEED VALVE   | 13. SURGE TANK (4 cu. ft.)   |
| 6. ALTITUDE CHAMBER  | 14. PRESSURE REGULATOR   |
| 7. 28000 REGULATOR   | 15. 2000 psi OXYGEN SOURCE   |
| 8. ALTIMETER   | 16. VACUUM SOURCE  |
|  | 17. FLAPPER CHECK VALVE  |

1 Manufactured by Haas Instrument Co., Washington, D.C.  
 2 Manufactured by Beckman Instrument Inc., Fullerton, California  
 \* Equivalent test equipment of equal accuracy may be used.

Altitude Compensated Air Enrichment Test  
Figure 701





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- (d) Decrease chamber pressure to 349 mm Hg (20,000 feet) and adjust air valve screw of diluter valve assembly (101) for an indication of 175 mm Hg (50%) oxygen on analyzer (12, figure 701).
- (e) Adjust chamber altitude from 5,000 to 40,000 feet in steps of 5,000 feet and record indications of analyzer (12). All indications must be within range shown in figure 702.
- (f) Repeat step e after adjusting regulator (14, figure 701) for 50 psi. All indications must be within range shown in figure 702.

NOTE: If indications are not within desired range, readjust in accordance with this procedure.

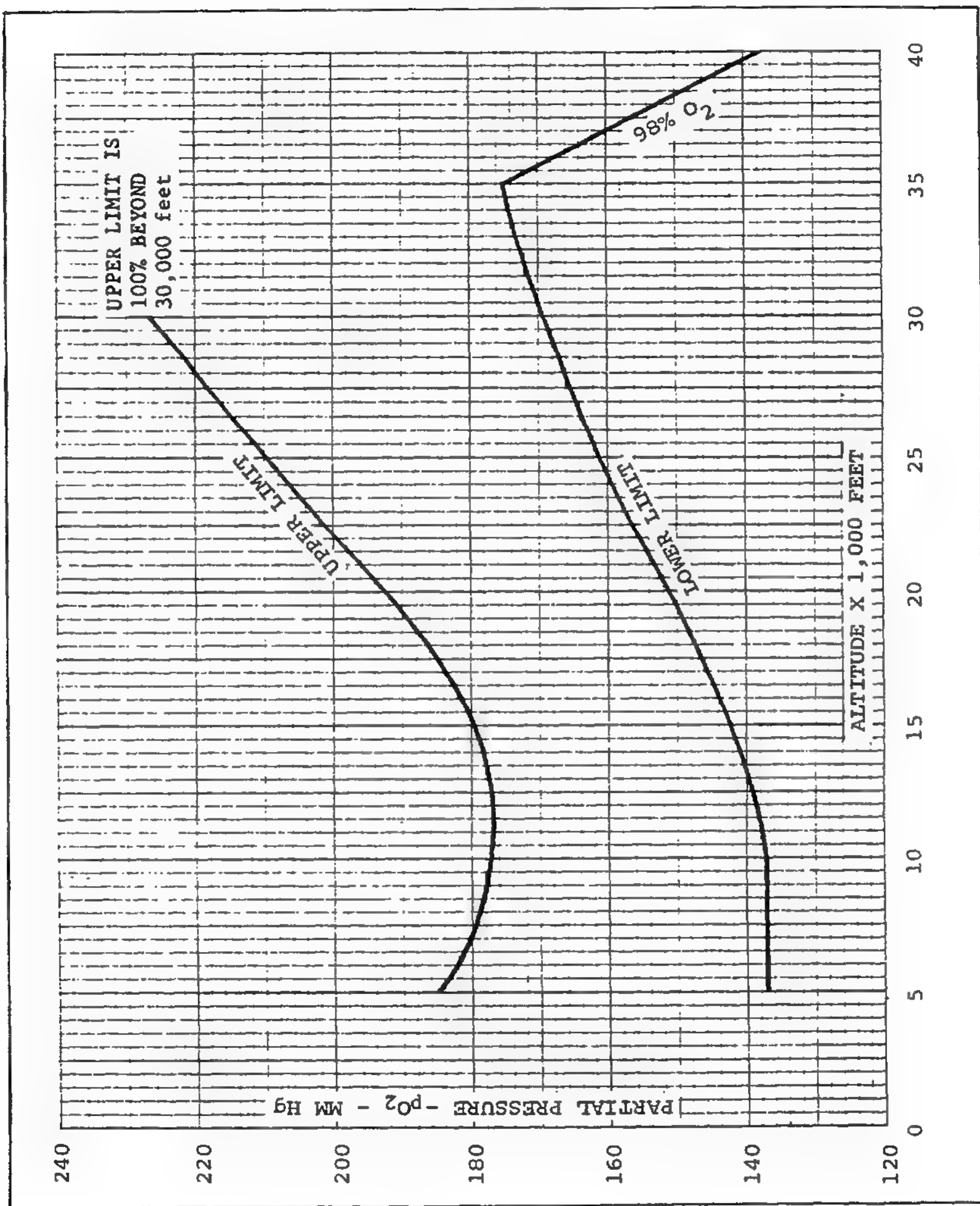
- (5) Remove the unit from the test setup.

B. Flow Suction - Normal Dilution

- (1) Use a standard oxygen diluter regulator test stand as shown in figure 703 and connect the 28000 regulator outlet to a vacuum source. Apply 50 psi to the 28000 regulator inlet.
- (2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "NORMAL"; "EMERGENCY" - "OFF".
- (3) Slowly open valve (10) until flow indicator (9) indicates 100 LPM. Suction, as indicated on draft gauge (16), shall not exceed 2.0 in. of water.
- (4) Slowly open valve (10) until flow indicator (9) indicates 120 LPM. Suction, as indicated on draft gauge (16), shall not exceed 2.7 in. of water.

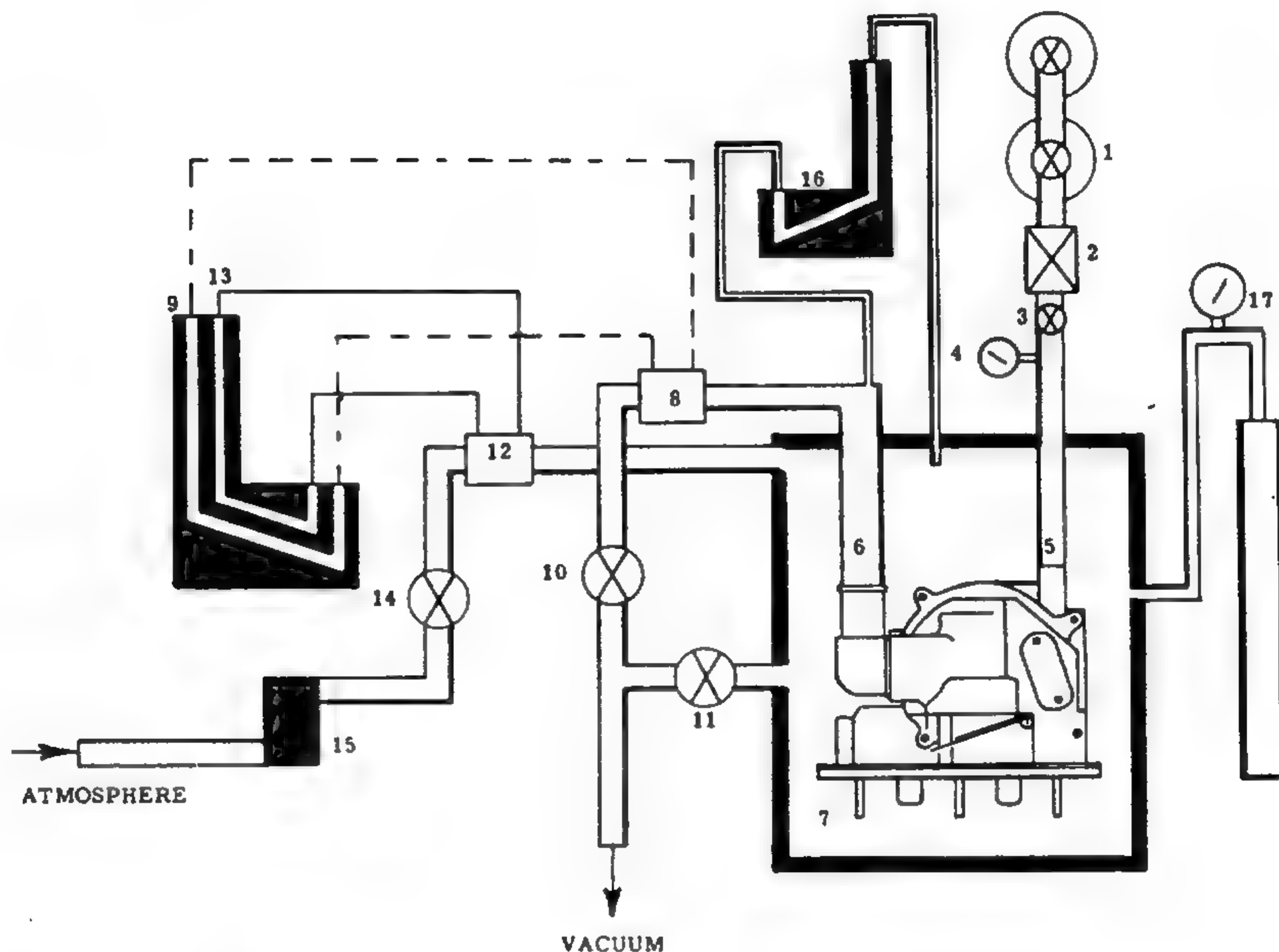
C. Flow Suction - 100% Oxygen

- (1) Use a standard oxygen diluter regulator test stand as shown in figure 703 and connect the 28000 regulator outlet to a vacuum source. Apply 50 psi to the 28000 regulator inlet.
- (2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "100%"; "EMERGENCY" - "OFF".



Oxygen Concentration Limits vs Altitude  
Figure 702

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- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. HIGH PRESSURE OXYGEN SOURCE      | 10. VALVE                          |
| 2. PRESSURE REDUCER                 | 11. CHAMBER BLEED VALVE            |
| 3. SLOW OPENING VALVE               | 12. AIR FLOW ORIFICE (Vol-O-Flo)   |
| 4. PRESSURE GAUGE                   | 13. AIR FLOW INDICATOR (Vol-O-Flo) |
| 5. REGULATOR INLET                  | 14. VALVE                          |
| 6. REGULATOR OUTLET                 | 15. FILTER                         |
| 7. ALTITUDE CHAMBER                 | 16. DRAFT GAUGE                    |
| 8. TOTAL FLOW ORIFICE               | 17. ALTIMETER                      |
| 9. (Vol-O-Flo)                      |                                    |
| 9. TOTAL FLOW INDICATOR (Vol-O-Flo) |                                    |

Schematic of 28000 Regulator Mounted in Altitude Chamber  
of Standard Diluter Regulator Test Stand  
Figure 703





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- (3) Slowly open valve (10) until flow indicator (9) indicates 80 liters per minute. The required suction, as indicated on draft gauge (16), shall not exceed 1.7 inches of water.

D. Emergency Pressure (See part C of figure 704)

- (1) Connect the 28000 regulator to a test setup as shown in part C of figure 704. Apply 50 psi to the 28000 regulator inlet.
- (2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "100%"; and "EMERGENCY" - "OFF".
- (3) Open valve (14) to obtain an indication of 10 liters per minute on flowmeter (12). Note indication on manometer (13).
- (4) With a flow of 10 liters per minute on flowmeter (12) move "EMERGENCY" lever of 28000 regulator to "ON" position. Manometer (13) must indicate a minimum of 1.5 inches of water more than that indicated in step (3). If necessary adjust set-screw (155, IPL figure 1) to obtain this indication.

E. Supply Valve Leakage (See part A of figure 704).

- (1) Connect the 28000 regulator inlet to a 75 psi pressure source.
- (2) With "SUPPLY" lever of 28000 regulator in "OFF" position apply 75 psi to the regulator inlet.
- (3) With valve (8) open there shall be no leakage indicated on flowmeter (7).

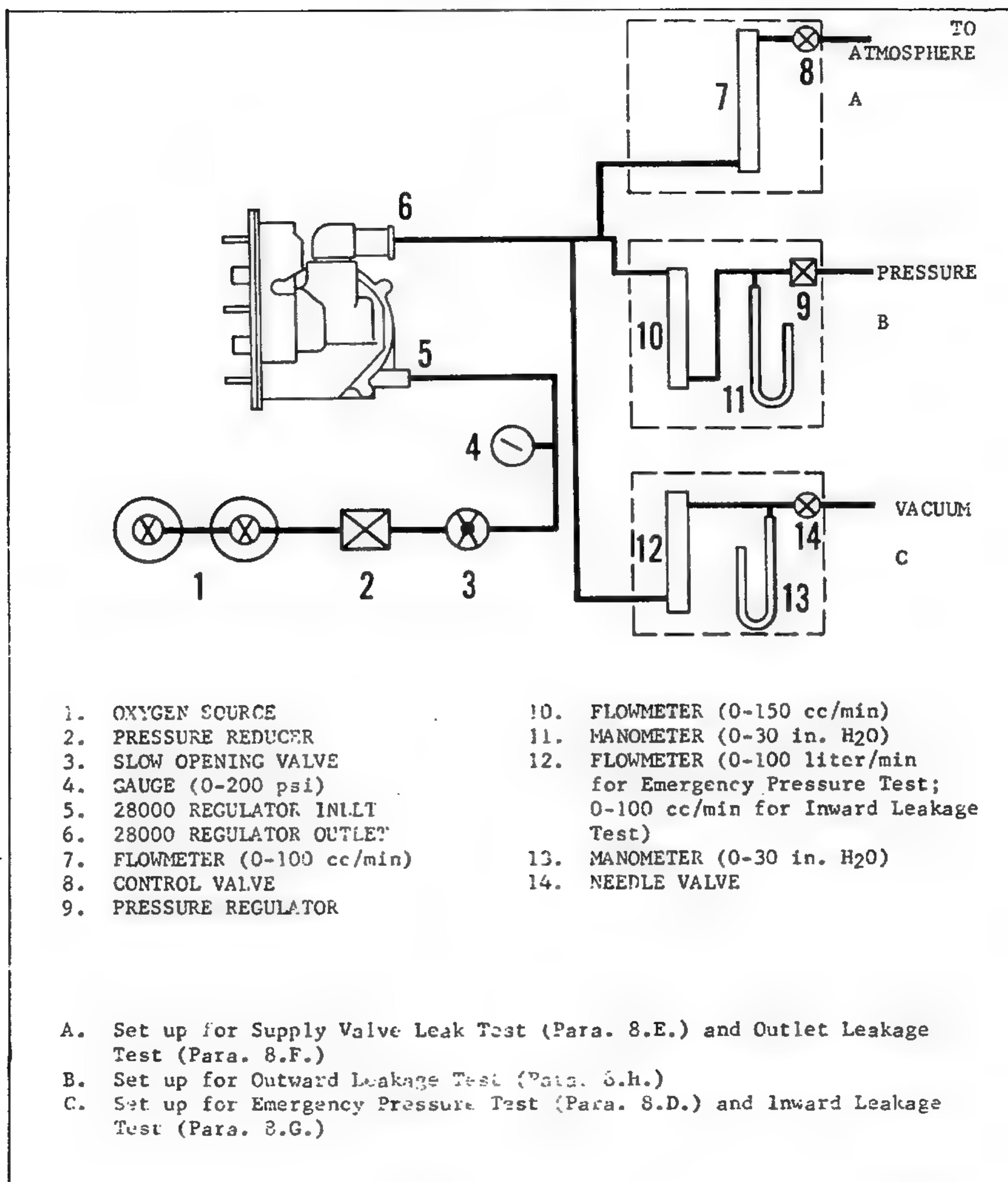
F. Outlet Leakage (See part A of figure 704).

- (1) Connect the 28000 regulator inlet to a 75 psi pressure source.
- (2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "NORMAL"; and "EMERGENCY" - "OFF".
- (3) With valve (8) open, leakage, as indicated by flowmeter (7) shall not exceed 10 cc per minute.

G. Inward Leakage (See part C of figure 704).

- (1) Connect the 28000 regulator to the test stand and set regulator to: "SUPPLY" - "OFF"; "OXYGEN" - "100%"; and "EMERGENCY" - "OFF".

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Leakage and Pressure Tests Setups  
Figure 704

## TEMPORARY REVISION 35-14

### INSTRUCTIONS:

Insert this page facing page # 708.

### REVISIONS:

The revisions on this page are the following:

1. Original Text:

J.(3). Check insulation resistance between mutually insulated parts.

2. Revised Text:

**CAUTION: REPEATED EXPOSURE TO THE HIGH VOLTAGES APPLIED DURING DIELECTRIC TESTING HAS A CUMULATIVE DETRIMENTAL EFFECT ON THE TESTED ITEMS.**

**CAUTION: IF DIELECTRIC TESTING OF THE UNIT IS DEEMED NECESSARY, PERFORM THE TEST AT REDUCED VOLTAGE LEVELS TO MINIMIZE THE CUMULATIVE DETRIMENTAL EFFECT ON THE COMPONENTS.**

J.(3). Check insulation resistance at 500 Volts Direct Current between mutually insulated parts.

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(2) Open valve (14) to obtain an indication of 10 inches of water on manometer (13).

(3) Leakage as indicated by flowmeter (12) shall not exceed 0.2 LPM.

H. Outward Leakage (See part B of figure 704).

(1) Connect the 28000 regulator to the test stand and set regulator to: "SUPPLY" - "OFF"; "OXYGEN" - "NORMAL"; and "EMERGENCY" - "OFF".

(2) Adjust pressure regulator (9) for an indication of 17 inches of water as shown on manometer (11).

(3) The outward leakage, as indicated on flowmeter (10), shall not exceed 120 cc per minute.

I. Flow Indicator

(1) Use a standard oxygen diluter regulator test stand as shown in figure 703 and connect the 28000 regulator outlet to a vacuum source. Apply 70 psi to the 28000 regulator inlet.

(2) Set 28000 regulator to: "SUPPLY" - "ON"; "OXYGEN" - "100%"; "EMERGENCY" - "OFF".

(3) Slowly open valve (10) until flow indicator (9) indicates 2 liters per minute. Observe the flow indicator of the 28000 regulator for a visual indication of flow through the regulator.

(4) Repeat step (3) at a chamber altitude of 40,000 feet with a flow of 2 standard liters per minute. There shall be a visual indication of flow through the 28000 regulator.

J. Panel Lighting

(1) Apply 5 volts to 28000-1, -3 and -9 and 28 volts to 28000-5, -7, -15 and -17 light circuits.

CAUTION: APPLICATION OF IMPROPER HIGH VOLTAGES TO LIGHTING CIRCUITS OF -1, -3, and -9 UNITS, WILL CAUSE BULB BURNOUTS AND NECESSITATE REPLACEMENT OF LIGHT PLATE.

(2) Electrical continuity is indicated by glowing of lights.

(3) Check insulation resistance between mutually insulated parts.

(4) Insulation resistance shall not be less than 100 megohms.



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9. Trouble Shooting

A. See figure 901 for a chart containing troubles, probable causes and remedies.

TROUBLE	PROBABLE CAUSE	REMEDY
Outward leakage between cover (160, IPL figure 1) and body (135)	Screws (73, 94 and 95, IPL figure 1) loose	Tighten loose screws
	Dirt or foreign matter on mating surfaces	Clean and remate surfaces
	Faulty packing (137)	Replace packing
	Faulty or improperly seated diaphragm assembly (136)	Reseat or replace diaphragm
Outward leakage at lens (68)	Screws (24) loose	Tighten loose screws
	Faulty packing (69)	Replace packing
Outward leakage at adapter (89)	Faulty packing (92)	Replace packing
Outward leakage at union (138)	Loose union (138)	Tighten union
	Faulty packing (140)	Replace packing
Outward leakage at valve assembly (101)	Inlet valve damaged or not seating properly	Replace valve assembly (101, IPL figure 1)
Outward leakage at cover (145)	Faulty gasket (152) and/or packing (153)	Replace gasket and/or packing
Inward leakage greater than allowable 200 cc/min	Cover assembly (97) not sealing properly	Replace cover assembly
	Setscrew (148) not adjusted properly	Readjust setscrew to seat valve (154)
	Valve (154) not sealing	Replace valve

Trouble Shooting Chart  
Figure 901 (Sheet 1 of 3)



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TROUBLE	PROBABLE CAUSE	REMEDY
Valve assembly (133) leaks at pressures under 17 inches H <sub>2</sub> O	Weak spring	Replace valve assembly
Valve assembly (133) fails to open at pressures over 17 inches H <sub>2</sub> O	Faulty spring	Replace valve assembly
Air supply fails to close off at higher altitudes resulting in improper air/oxygen ratio	Aneroid (114) not properly adjusted	Readjust aneroid per para. 8.A.
	Diaphragm assembly (136) punctured	Replace diaphragm assembly
	Defective seat (106), gasket (107) or modulator (110)	Replace defective parts
Oxygen supply fails to close off at lower altitudes resulting in improper air/oxygen ratio	Oxygen control lever in "100%" position	Return lever to "NORMAL" position
	Valve (128) not seating	Replace spring (125) and/or spring (130) and readjust mechanism per para. 6.D. (5)
	Defective modulator (110)	Replace modulator
	Aneroid (114) not properly adjusted	Readjust aneroid per para. 8.A.
Outlet leakage in excess of 10 cc/min. with supply lever in "ON" position	Emergency lever in "ON" position	Return lever to "OFF" position
	Diaphragm assembly (136) depressing valve assembly (121)	Remove wrinkles and puckers from diaphragm assembly; re-install in proper position
	Faulty gasket (122)	Replace gasket
	Bent demand valve stem or weak demand valve spring	Replace valve assembly (121)

Trouble Shooting Chart  
Figure 901 (Sheet 2 of 3)

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TROUBLE	PROBABLE CAUSE	REMEDY
Excessive suction required to actuate regulator	Punctured diaphragm assembly (136)	Replace diaphragm assembly
	Leak between cover (160) and body (135)	Tighten loose screws (73, 94 and 95); reseal diaphragm assembly (136)
	Faulty valve assembly (121)	Replace demand valve assembly
Light assembly (8) fails to light	Lamp burned out	Replace lamp
	Loose electrical connection	Check all connections and tighten/solder as necessary

Trouble Shooting Chart  
Figure 901 (Sheet 3 of 3)

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10. Storage Instructions

- A. Place "OXYGEN" toggle to "100%" position and cap the inlet and outlet of the regulator; then place the entire unit in a clean plastic bag for storage.

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11. Special Tools, Fixtures and Test Equipment

A. No special hand tools are required to overhaul this regulator.

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12. Illustrated Parts List

A. This Illustrated Parts List lists and describes the parts of the 28000-1, 28000-3, 28000-5, 28000-7, 28000-9, 28000-15 and 28000-17 regulator assemblies.

- (1) The Illustrated Parts List consists of a parts listing and a completely indexed drawing. The regulator assemblies are followed immediately by their component parts, properly indented thereunder to show their relationship to the assemblies.
- (2) The quantities listed in the "UNITS PER ASSY" column are, in the case of assemblies, the total quantity used per regulator assembly at the location indicated, while the component parts indented under the assemblies are the quantity used per assembly. The quantities specified, therefore are not necessarily the total used per regulator assembly. See the Numerical Index for the total quantity used per regulator.
- (3) The part numbers listed in the "PART NUMBER" column are Scott Aviation part numbers except standard parts, which are listed by "MS" and "AN" numbers, vendor items which are listed by vendor part numbers.
- (4) When the quantity of a part is to be selected as required, the abbreviation AK appears in the "UNITS PER ASSY" column.
- (5) A six place code following the description of a part indicates the manufacturer of that part. Standard parts and parts carried under Scott part numbers have no vendor code. The following list contains the codes and names and addresses of manufacturers supplying items or articles for the regulator assembly.

VENDOR'S CODE

CODE	NAME AND ADDRESS
V01139	General Electric Co. Silicone Products Div. Waterford, New York
V02615	The Nylock Co. Division of United Shoe Machinery Corp. Paramus, New Jersey



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VENDOR'S CODE

CODE	NAME AND ADDRESS
V04211	Coastal Dynamics Corp. Venice, California
V05972	Loctite Corp. Newington, Connecticut
V07098	Linde Division of Union Carbide Tonawanda, New York
V18873	E.I. DuPont DeNemours & Co., Inc. Wilmington, Delaware
V71984	Dow Corning Corp. Midland, Michigan
V72794	Dzus Fastener Co., Inc. West Islip, New York
V72914	Grimes Mfg. Co. Urbana, Ohio
V72962	Elastic Stop Nut Corporation of America Union, New Jersey
V73287	M.D. Hubbard Spring Co. Pontiac, Michigan
V79136	Waldes Kohinoor, Inc. Long Island City, New York
V83930	Adel Products Division Huntington Plant Huntington, W. Virginia

- (6) Parts used on only one part number regulator are indicated by a letter symbol immediately following the description of a part in the "EFFECT CODE" column. An explanation of the letter symbols used is outlined below. In cases where the "EFFECT CODE" column has been left blank, parts listed are common to all regulator assemblies.

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PART NUMBER	EFFECT CODE
28000-01	A
28000-03	B
28000-05	C
28000-07	D
28000-09	E
28000-15	F
28000-17	G

B. How to use this Illustrated Parts List

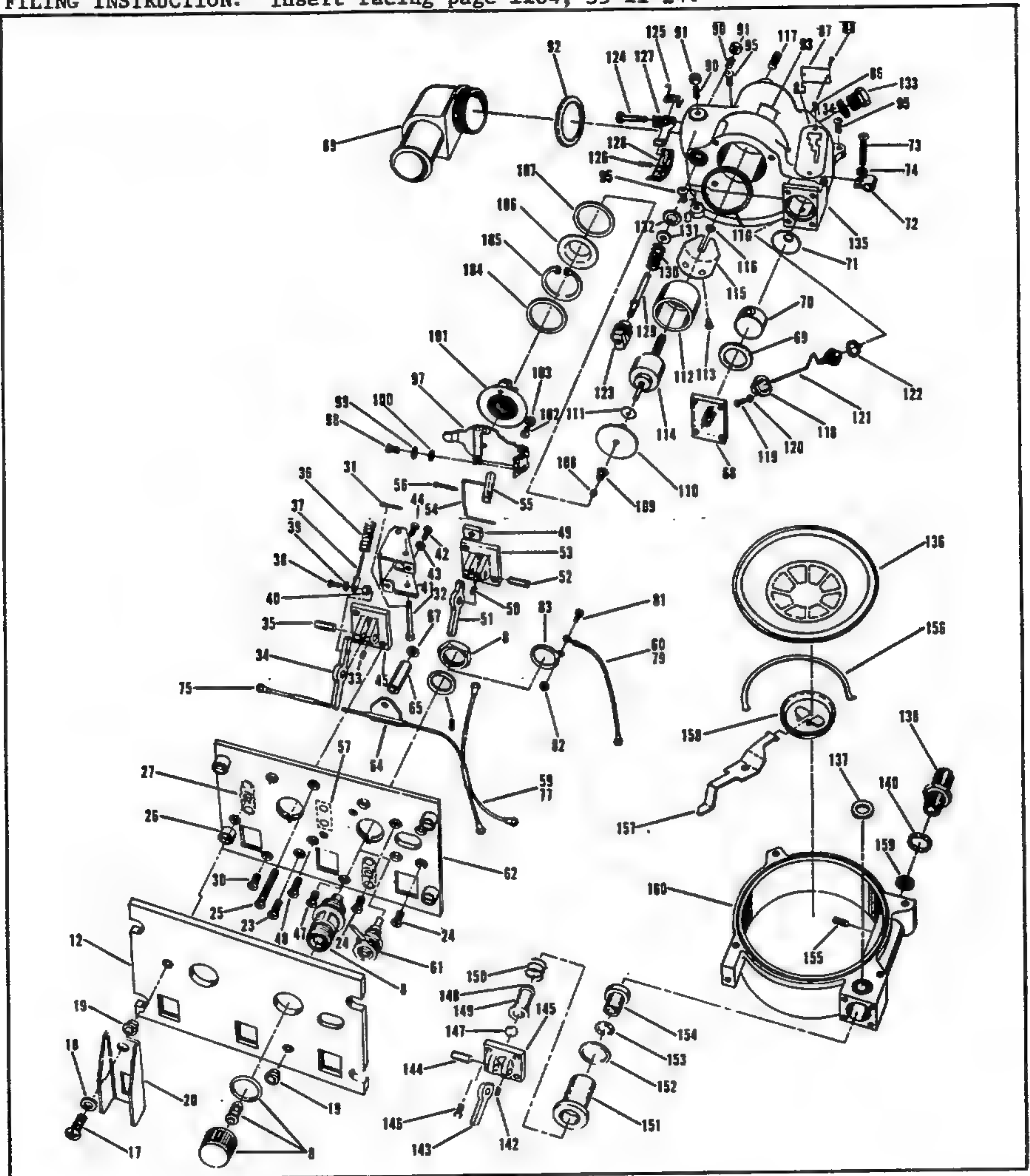
- (1) If neither the part number nor the nomenclature is known, the part can be found by comparison with the exploded view illustration. When located on the illustration, the item number will refer to the line in the Detailed Parts List with the part number and the nomenclature.
- (2) If the part number is known, refer to the Numerical Index and find the part number. Opposite the part number is the figure and item number which refers to the Detailed Parts List. Proper nomenclature is opposite the item number on the Detailed Parts List page.



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TEMPORARY REVISION 35-13

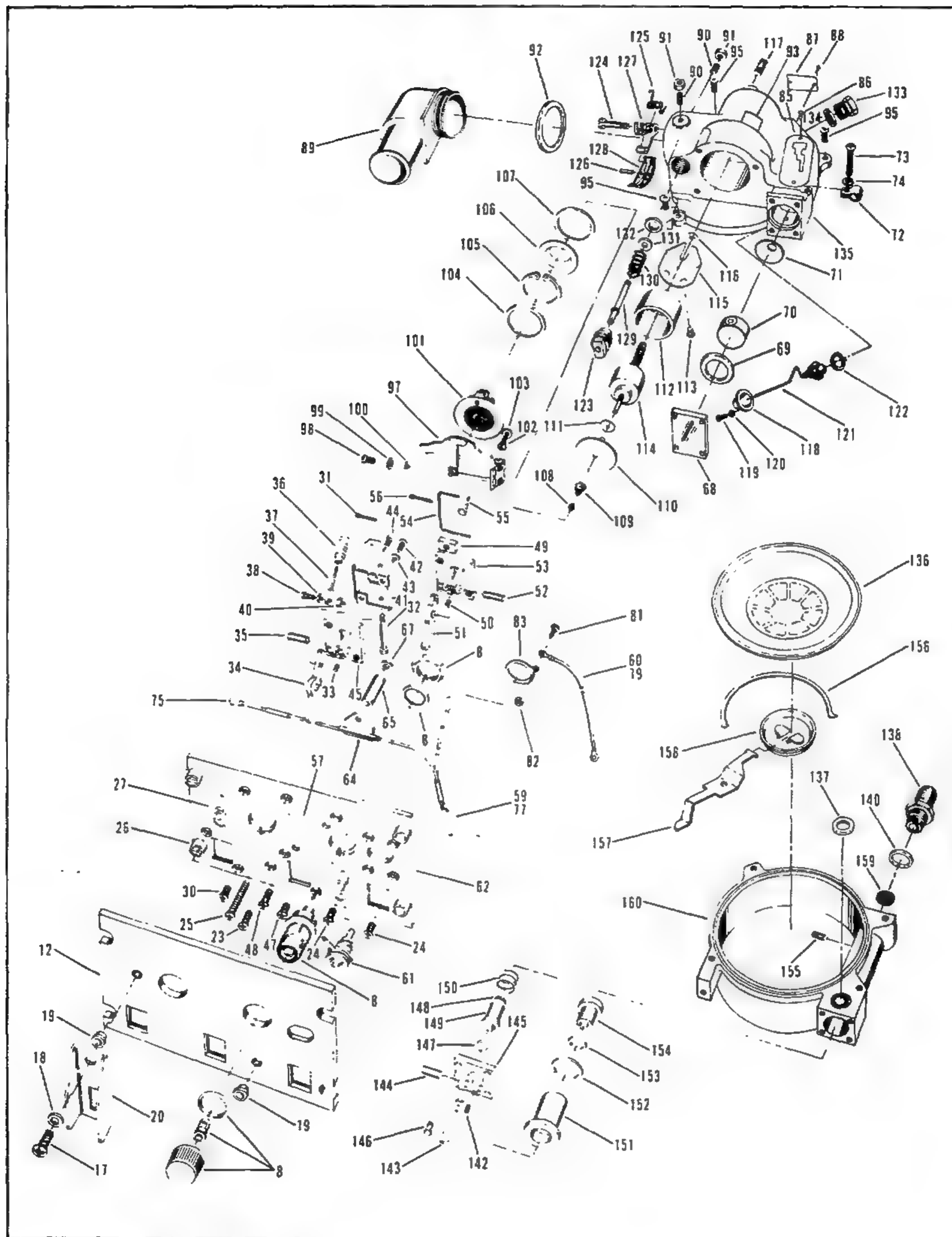
FILING INSTRUCTION: Insert facing page 1104, 35-11-24.



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- ITEM NOT ILLUSTRATED

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FIG. ITEM		PART NUMBER	NOMENCLATURE							EFFECT CODE	UNITS PER ASSY
			1	2	3	4	5	6	7		
1	-1	28000-01	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							A	1
	-2	28000-03	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							B	1
	-3	28000-05	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							C	1
	-4	28000-07	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							D	1
	-5	28000-09	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							E	1
	-6	28000-15	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							F	1
	-7	28000-17	REGULATOR ASSEMBLY - OXYGEN DILUTER DEMAND							G	1
	8	A5070-24	. LIGHT ASSEMBLY (V72914)							CF	2
	-9	AN3502-1B	. LIGHT ASSEMBLY							D	2
	-10	A5070-6	. LIGHT ASSEMBLY (V72914)							E	2
	-11	A5070C24CK	. LIGHT ASSEMBLY (V72914)							G	2
	12	10416-2	. PLATE - LIGHTING							CF	1
	-13	10416-3	. PLATE - LIGHTING							DE	1
	-14	28005-1	. PLATE - LIGHTING							B	1
	-15	28005-3	. PLATE - LIGHTING							A	1
	-16	10416-4	. PLATE - LIGHTING							G	1
			ATTACHING PARTS								
	17	AN515B6R10	. SCREW								2
	18	10003192	. WASHER								1
	19	10429	. BUSHING								2
			-----								
	20	10389	. GUARD - SWITCH								1
	-21	10440-3	. MOUNTING PLATE ASSEMBLY							C-G	1
	-22	27897-1	. MOUNTING PLATE ASSEMBLY							AB	1
			ATTACHING PARTS								
	23	AN505-6R4	. SCREW								1
	24	AN505-6R6	. SCREW								4
	25	AN505-6R20	. SCREW								1
			-----								
	26	PF5C3-1/2	. FASTENER (V72794)								4
	27	68XA1-62	. NUT - ANCHOR (V74962)								2
			ATTACHING PARTS								
	-28	MS20426AD3-4	. RIVET								4
			-----								
	-29	10447	. COVER ASSEMBLY								1
			ATTACHING PARTS								
	30	MS35190-220	. SCREW								2
			-----								
	31	AN381-2-6	. . PIN - COTTER								1
	32	AN392-31	. . . PIN - FLATHEAD								1
33	AN565D4H2	. . . SETSCREW								1	
34	10445	. . . ARM								1	
		ATTACHING PARTS									
35	10442	. . . PIN - PIVOT								1	
		-----									
36	25080	. . . SPRING								1	
37	10454	. . . PIN - TOGGLE								1	
		ATTACHING PARTS									
38	AN520-2-6	. . . SCREW								1	
39	AN9367.2	. . . WASHER								1	
40	10390	. . . BUSHING - PIN								1	
		-----									

- ITEM NOT ILLUSTRATED

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FIG. ITEM	PART NUMBER	NOMENCLATURE							EFFECT CODE	UNITS PER ASSY
		1	2	3	4	5	6	7		
1	41	10452	.	.	.	HOUSING ASSEMBLY				1
	42	AN520-2-2	.	.	.	ATTACHING PARTS				1
	43	AN936A2	.	.	.	SCREW				1
	44	MS51960-6	.	.	.	WASHER				1
	45	10409-1	.	.	.	SCREW				1
	46	10438	.	.	.	-----				
	47	MS35190-220	.	.	.	COVER - VALVE				1
	48	MS35190-224	.	.	.	TOGGLE ASSEMBLY				1
	49	10396	.	.	.	ATTACHING PARTS				
	50	AN565D4H2	.	.	.	SCREW				1
	51	10420	.	.	.	SCREW				1
	52	10442	.	.	.	NUT - SPECIAL				1
	53	10439	.	.	.	-----				
	54	10444-1	.	.	.	SETSCREW				1
	55	10437	.	.	.	ARM - TOGGLE				1
	56	AN530-2-1	.	.	.	ATTACHING PARTS				
	57	10436	.	.	.	PIN - COTTER				1
	58	MS2426AD2-3	.	.	.	-----				
	59	26012-1	.	.	.	BRACKET				1
	60	26012-3	.	.	.	ATTACHING PARTS				
	61	108	.	.	.	RIVET				2
	62	26083	.	.	.	-----				
	63	27898	.	.	.	CABLE ASSEMBLY	AB			1
	64	10467	.	.	.	CABLE ASSEMBLY	AB			1
	65	10480	.	.	.	CONNECTOR - RECEPTACLE	AB			1
	66	10480-1	.	.	.	ELECTRICAL (V04211)				
	67	AN960PD6L	.	.	.	PLATE - MOUNTING	C-G			1
	68	10451	.	.	.	PLATE - MOUNTING	AB			1
	69	2800C18A	.	.	.	CLIP	C-G			1
	70	22162-2	.	.	.	SPACER	C-G			1
	71	22162-1	.	.	.	SPACER	AB			1
	72	22162-2	.	.	.	WASHER				AR
	73	22162-1	.	.	.	LENS				1
	74	22162-2	.	.	.	PACKING - PREFORMED				1
	75	22162-1	.	.	.	BODY ASSEMBLY - FLOW				1
	76	22162-2	.	.	.	INDICATOR (SUPERSEDES				
	77	22162-1	.	.	.	22162-1 IN ALL CONFIGUR-				
	78	22162-2	.	.	.	ATIONS)				
	79	22162-1	.	.	.	GASKET				1
	80	22162-2	.	.	.	CLAMP - LOOP (V83930)				1
	81	AN515-6R24	.	.	.	ATTACHING PARTS				
	82	AN935-6	.	.	.	SCREW				1
	83	10387	.	.	.	WASHER				1
	84	10492	.	.	.	-----				
	85	10337-1	.	.	.	CABLE ASSEMBLY - ELECTRICAL	CEFG			1
	86	10492-2	.	.	.	WIRE - SIZE AN20 X 5 1/2 IN.LG.	D			1
	87	10387-2	.	.	.	CABLE ASSEMBLY - ELECTRICAL	CEFG			1
	88	10492-1	.	.	.	WIRE - SIZE AN20 X 36 IN.LG.	D			1
	89	10387-2	.	.	.	CABLE ASSEMBLY - ELECTRICAL	CEFG			1
	90	10492-1	.	.	.	WIRE - SIZE AN20 X 36 IN.LG.	D			1
	91	AN515-4-4	.	.	.	ATTACHING PARTS				
	92	92NM-40	.	.	.	SCREW	CEFG			1
	93	92NM-40	.	.	.	NUT - SELF-LOCKING (V72962)	CEFG			1
	94	92NM-40	.	.	.	-----				

- ITEM NOT ILLUSTRATED

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FIG. ITEM	PART NUMBER	NOMENCLATURE	EFFECT CODE	UNITS PER ASSY
1 2 3 4 5 6 7				
1	83	10496-1	CEFG	1
	-84	10496	D	1
	85	28099		1
	86	AN535-2-2		2
	87	10496		1
	88	AN535-2-2		2
	89	27896		1
	90	AN565E-H7		2
	91	AN340-4		2
	92	2800C22A		1
	93	10003198		1
	-94	25099-01		1
	95	59857-00		1
	96	DELETED		
	97	24896-1		1
	98	AN515--R3		2
	99	AN936A		2
	100	AN960-4		2
	101	24895-1		1
	102	AN515-6R3		2
	103	AN936-0		2
	104	10418-3		1
	105	N3001-190MF		1
	106	24895		1
	107	10418-4		1
	108	11118		1
	109	28653		1
	110	27949		1
	111	AD1961		AR
	112	28002		1
	113	AN515D 4--		2
	114	25089-1		1
	115	28004		1
	116	BOW494PB10		1
	117	28003-1		1
	118	10395		1
	119	N300A4-4		2
	120	AN936-4		2
	121	10394		1
	122	A1120B		1
	123	10448		1
	124	10469		1
	125	10491		1

- ITEM NOT ILLUSTRATED

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**SWU**  
**28000 SERIES**  
**OVERHAUL MANUAL**

**TEMPORARY REVISION 35-13**

**FILING INSTRUCTION: Insert facing page 1108, 35-11-24.**

**ADD:**

	170	MS 9068-028	. . PACKING, PREFORMED		1
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FIG. ITEM	PART NUMBER	NOMENCLATURE							EFFECT CODE	UNITS PER ASSY
		1	2	3	4	5	6	7		
1	120	52-012-062-0312	.	.	PIN - SPRING (V72962)					1
	127	10473	.	.	LINK ASSEMBLY					1
	128	10472	.	.	VALVE - SUPPLEMENTARY OXYGEN					1
	129	10471	.	.	PIN					1
	130	10470	.	.	SPRING - COMPRESSION					1
	131	AN960PD4	.	.	WASHER					1
	132	2800A1A	.	.	PACKING - PREFORMED					1
	133	10465	.	.	VALVE ASSEMBLY - RELIEF					1
	134	9014B1	.	.	GASKET - RELIEF VALVE					1
	135	24897	.	.	BODY - REGULATOR					1
	136	10497	.	.	DIAPHRAGM					1
	137	2800B4A	.	.	PACKING - PREFORMED					1
	138	MS21902-5	.	.	UNION				ABC DFG E	1
	139	MS24399D4	.	.	REDUCER					1
	140	MS28778-5	.	.	PACKING					1
	141	25081-3	.	.	COVER ASSEMBLY - REGULATOR					1
	142	AN565D4H2	.	.	SETSCREW					1
	143	24477	.	.	ARM					1
			.	.	ATTACHING PARTS					
	144	10442	.	.	PIN - PIVOT					1
			.	.	-----*					
	145	25106	.	.	COVER					1
			.	.	ATTACHING PARTS					
	146	AN505-484	.	.	SCREW					1
			.	.	-----*					
	147	15194	.	.	BALL - BEARING					1
	148	M70CR440-4E	.	.	SETSCREW (V02615)					1
	149	24649	.	.	PISTON					1
	150	24843	.	.	SPRING					1
	151	24846	.	.	RETAINER					1
	152	2827-28	.	.	GASKET					1
	153	2800A5A	.	.	PACKING - PREFORMED					1
	154	24847	.	.	VALVE					1
	155	28398	.	.	SETSCREW					1
	156	10468	.	.	SPRING					1
	157	10435	.	.	LEVER					1
	158	10446	.	.	PLATE - PRESSURE					1
	159	8820-2	.	.	SCREEN - FILTER					1
	160	10412-1	.	.	COVER - REGULATOR					1

- ITEM NOT ILLUSTRATED





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PART NUMBER	AIR- LINE P/N	CH-SECT-UNIT-FIG-ITEM	TTL REQ		PART NUMBER	AIR- LINE P/N	CH-SECT-UNIT-FIG-ITEM	TTL REQ
AD1961		35- 10- 24- 1 111	AR		N5001-150MF		35- 10- 24- 1 105	1
AN340-4		35- 10- 24- 1 91	2		PFSC3-1/2		35- 10- 24- 1 26	4
AN3502-1B		35- 10- 24- 1 -9	2		10003192		35- 10- 24- 1 18	1
AN380-2-1		35- 10- 24- 1 56	1		10003198		35- 10- 24- 1 93	1
AN381-2-6		35- 10- 24- 1 31	1		10387		35- 10- 24- 1 75	1
AN392-31		35- 10- 24- 1 32	1		10387-1		35- 10- 24- 1 77	1
AN500A4-4		35- 10- 24- 1 119	2		10387-2		35- 10- 24- 1 79	1
AN505-4R4		35- 10- 24- 1 146	4		10389		35- 10- 24- 1 20	1
AN505-6R20		35- 10- 24- 1 25	1		10390		35- 10- 24- 1 40	1
AN505-6R4		35- 10- 24- 1 23	1		10394		35- 10- 24- 1 121	1
AN505-6R6		35- 10- 24- 1 24	4		10395		35- 10- 24- 1 118	1
AN515-4-4		35- 10- 24- 1 81	1		10396		35- 10- 24- 1 49	1
AN515-4R3		35- 10- 24- 1 98	2		10409		35- 10- 24- 1 53	1
AN515-6R24		35- 10- 24- 1 73	1		10409-1		35- 10- 24- 1 45	1
AN515-6R3		35- 10- 24- 1 102	2		10412-1		35- 10- 24- 1 160	1
AN515B6R10		35- 10- 24- 1 17	2		10416-2		35- 10- 24- 1 12	1
AN515DD2-2		35- 10- 24- 1 113	2		10416-3		35- 10- 24- 1 -13	1
AN520-2-2		35- 10- 24- 1 42	1		10416-4		35- 10- 24- 1 -16	1
AN520-2-6		35- 10- 24- 1 38	1		10418-2		35- 10- 24- 1 107	1
AN535-2-2		35- 10- 24- 1 86	4		10418-3		35- 10- 24- 1 104	1
		35- 10- 24- 1 88			10420		35- 10- 24- 1 51	1
AN565D4H2		35- 10- 24- 1 33	3		10429		35- 10- 24- 1 19	2
		35- 10- 24- 1 50			10435		35- 10- 24- 1 157	1
AN565E4H7		35- 10- 24- 1 90	2		10436		35- 10- 24- 1 57	1
AN935-4		35- 10- 24- 1 120	2		10437		35- 10- 24- 1 55	1
AN935-6		35- 10- 24- 1 74	4		10438		35- 10- 24- 1 -46	1
		35- 10- 24- 1 96			10440-3		35- 10- 24- 1 -21	1
AN936A2		35- 10- 24- 1 39	2		10442		35- 10- 24- 1 35	3
		35- 10- 24- 1 43					35- 10- 24- 1 52	
AN936A4		35- 10- 24- 1 99	2				35- 10- 24- 1 144	
AN936A6		35- 10- 24- 1 103	2		10444-1		35- 10- 24- 1 54	1
AN960D4		35- 10- 24- 1 100	2		10445		35- 10- 24- 1 34	1
AN960PD4		35- 10- 24- 1 131	1		10446		35- 10- 24- 1 158	1
AN960PD6L		35- 10- 24- 1 67	AR		10447		35- 10- 24- 1 -29	1
A1118		35- 10- 24- 1 108	1		10448		35- 10- 24- 1 123	1
A1120B		35- 10- 24- 1 122	1		10451		35- 10- 24- 1 68	1
A5070C24CK		35- 10- 24- 1 -11	1		10452		35- 10- 24- 1 41	1
A5070-24		35- 10- 24- 1 8	2		10454		35- 10- 24- 1 37	1
A5070-6		35- 10- 24- 1 -10	2		10463		35- 10- 24- 1 87	1
BOW494PB10		35- 10- 24- 1 116	1		10465		35- 10- 24- 1 -133	1
MS20426AD2-3		35- 10- 24- 1 -58	2		10467		35- 10- 24- 1 64	1
MS20426AD3-4		35- 10- 24- 1 -28	4		10468		35- 10- 24- 1 156	1
MS21902-5		35- 10- 24- 1 138	1		10469		35- 10- 24- 1 124	1
MS24399D4		35- 10- 24- 1 -139	1		10470		35- 10- 24- 1 130	1
MS28778-5		35- 10- 24- 1 140	1		10471		35- 10- 24- 1 129	1
MS35190-220		35- 11- 24- 1 30	3		10472		35- 10- 24- 1 128	1
		35- 11- 24- 1 47			10473		35- 10- 24- 1 127	1
MS35190-224		35- 11- 24- 1 48	1		10480		35- 10- 24- 1 65	1
MS51960-6		35- 11- 24- 1 44	1		10480-1		35- 10- 24- 1 -66	1
M70CR440-4E		35- 10- 24- 1 148	1		10491		35- 10- 24- 1 125	1
					10492		35- 10- 24- 1 -76	1
					10492-1		35- 10- 24- 1 -80	1
					10492-2		35- 10- 24- 1 -78	1
					10496		35- 10- 24- 1 -84	1





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PART NUMBER	AIR- LINE P/N	CH-SECT-UNIT-FIG-ITEM	TTL REQ	PART NUMBER	LINE P/N	CH-SECT-UNIT-FIG-ITEM	TTL REQ
10496-1		35- 10- 24- 1 83	1	2800B4A		35- 10- 24- 1 137	1
10497		35- 10- 24- 1 136	1	2800C18A		35- 10- 24- 1 69	1
108		35- 10- 24- 1 61	1	2800C22A		35- 10- 24- 1 92	1
13194		35- 10- 24- 1 147	1	28000-01		35- 10- 24- 1 -1	1
22162		35- 10- 24- 1 70	1	28000-03		35- 10- 24- 1 -2	1
23395-1		35- 10- 24- 1 71	1	28000-05		35- 10- 24- 1 -3	1
24477		35- 10- 24- 1 143	1	28000-07		35- 10- 24- 1 -4	1
24845		35- 10- 24- 1 150	1	28000-09		35- 10- 24- 1 -5	1
24846		35- 10- 24- 1 151	1	28000-15		35- 10- 24- 1 -6	1
24847		35- 10- 24- 1 154	1	28000-17		35- 10- 24- 1 -7	1
24849		35- 10- 24- 1 149	1	28002		35- 10- 24- 1 112	1
24893-1		35- 10- 24- 1 101	1	28003-1		35- 10- 24- 1 117	1
24895		35- 10- 24- 1 106	1	28004		35- 10- 24- 1 115	1
24896-1		35- 10- 24- 1 97	1	28005-1		35- 10- 24- 1 -14	1
24897		35- 10- 24- 1 135	1	28005-3		35- 10- 24- 1 -15	1
25080		35- 10- 24- 1 36	1	28012-1		35- 10- 24- 1 59	1
25081-3		35- 10- 24- 1 -141	1	28012-3		35- 10- 24- 1 60	1
25083		35- 10- 24- 1 62	1	28098		35- 10- 24- 1 155	1
25089-1		35- 10- 24- 1 114	1	28099		35- 10- 24- 1 85	1
25099-01		35- 10- 24- 1 -93	1	2827-28		35- 10- 24- 1 152	1
25106		35- 10- 24- 1 145	1	28653		35- 10- 24- 1 109	1
27896		35- 10- 24- 1 89	1	52-012-062-0312		35- 10- 24- 1 126	1
27897-1		35- 10- 24- 1 -22	1	59857-00		35- 10- 24- 1 95	3
27898		35- 10- 24- 1 -63	1	68NA1-62		35- 10- 24- 1 27	2
27949		35- 10- 24- 1 110	1	754-2-2-6		35- 10- 24- 1 72	1
2800A1A		35- 10- 24- 1 132	1	8720-2		35- 10- 24- 1 159	1
2800A5A		35- 10- 24- 1 153	1	9014B1		35- 10- 24- 1 134	1
				92NM-40		35- 10- 24- 1 82	1

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